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GEOGRAPHICAL RECORD

NORTH AMERICA

A New Series of U. S. Geological Survey Index Maps. The index maps heretofore issued by the U. S. Geological Survey to show the extent and location of its published topographic sheets and geologic folios have been on the scale of 1: 2,500,000, the scale of the standard base map of the United States, of which they were excerpts. Twenty-one such index maps, officially designated as ''index circulars'' and numbered from 9-323a to 9-323v, constituted the series, each index map generally covering a group of states.

A new series of index maps has now been begun of which the scale is 1: 1,000,000 and in which practically every state is to be represented on a separate map. The new arrangement has been made possible by the recent compilation of the standard black-and-white base maps in 1: 500,000 (see *Bull.*, 1914, pp. 203, 713-714, 955, and 1915, pp. 313-314). The new index maps are reductions of the state base maps with the usual red overprint indicating the limits of the published sheets and folios; a valuable innovation, made possible by the large scale, is the indication, besides, of the triangulation net and the primary traverse and level lines. Although to date 32 states have been published in the base-map form, only the following 14 states are so far represented in the new index map series in 1 : 1,000,000 : Alabama, Georgia, Kentucky, Maryland and Delaware (on one map), Mississippi, New York, North Carolina, Pennsylvania and New Jersey (on one map), South Carolina, Tennessee, Virginia, West Virginia. It is the intention of the Survey, the Society is informed, to issue index maps on this scale when a reprint of an index circular becomes necessary and provided the base map of the state has been published. The new series receives an added interest from the fact that it makes available for certain sections of the United States maps on the millionth scale—in outline only, to be sure, with no indication of relief—before they can be had in the form of the International Map of the World. An edition of the new index maps without the red overprint would doubtless commend itself to geographers. On the millionth scale they would be only one-fourth as large as the 1: 500,000 base maps (*e. g.*, New York, 23 x 29 inches as against 46 x 58 inches), and therefore more convenient to consult, while hardly losing in legibility, because of the sharpness of line of the base maps.

Rainfall of the Northeastern United States. A discussion of the rainfall of the northeastern United States by B. C. Wallis (*Monthly Weather Review*, Vol. 43, 1915, pp. 11-14) presents a new series of charts of some interest. The rainfall for each month is shown by means of lines of equal departure from the rainfall norm. These lines are termed equipluves. The norm is the amount of rainfall that would occur at any place on the assumption that such rainfall was evenly distributed through the year. The norm is shown by the equipluve of 100. Differences from the norm are expressed in percentages. An equipluve of 120 means that the places through which it runs have 20 per cent. above the norm. It appears that ''a wave of dryness moves southeastward during the period when the temperature is falling, from September to the end of January, and a wave of wetness moves southeastward during the period when the temperature is rising, from May to August.''

A further discussion, by the same author, of the distribution of the rainfall of the eastern United States (*ibid.*, pp. 14-24) is illustrated by charts of equipluves, of wettest and driest months, and of rainfall regions, as well as by diagrams. This study leads to the conclusion that there are three rainfall belts: (1) a belt of summer rains and winter dryness, to the west and northwest; (2) a belt of rainfall at all seasons, intermediate in position; and (3) a belt of marked summer rains, along the Atlantic coast. The axis of all these belts is northeast-southwest. R. DeC. Ward.

Transportation of Canadian Wheat. The Canadian wheat crop for the present year is estimated at over 200,000,000 bushels. It is believed that, during this season, there will be little or no congestion of traffic. The Canadian Northern, the Grand Trunk Pacific and the Canadian Pacific Railways have already assembled many thousands of cars in the West, and are continually sending more. Owing, however, to the present shortage of ocean tonnage available for freight service, much uneasiness is manifested as to the foreign shipment of the new wheat crop. This is but one feature of the export business of the country which has been hampered both by the shortage of vessels and by the high freight prevailing since the outbreak of the war. So important is the problem of foreign shipment of the wheat crop that the Canadian government, according to authoritative reports, has entered into negotiations to have released from war service some of the vessels which have been requisitioned since the outbreak of the war, and to have pressed into the wheat-carrying service every available tramp steamer. Only by some such action, it is believed, will congestion be prevented at the eastern water terminals. A. L. Bishop.

Promotion of Canadian Foreign Trade. A new effort to promote the export and import trade of Canada has been announced (*Commerce Reports*, Aug. 25, 1915). One of the leading Canadian banks will undertake to assist manufacturers and importers in collecting information about marketing conditions in other parts of the Empire. ''The bank will make inquiries into the possibilities and requirements of markets abroad for exporters and importers who desire to extend their trade with British colonies or possessions. Owing to the large number of its correspondents and agents, it has unusual facilities for this work.'' The bank has 370 branches throughout the Dominion and in several of the leading British colonies, and is therefore in a position to assist in promoting a species of foreign trade which, for many years past, has received the attention of British and Canadian statesmen, economists and others, *viz.*, inter-Imperial trade. The carrying on of this kind of work by a banking institution, though a new departure in Canada, has for a long time been practiced successfully by some of the leading banks of Europe. A. L. Bishop.

Glaciers on Windward and Leeward Slopes. The Canadian Geological Survey has recently published two maps which show admirably the relation of snow fields and glaciers to windward and leeward slopes (Portland Canal Mining Area, Map 50A, accompanying *Memoir 32*, Department of Mines; Hazelton-Aldermere, Cassiar and Coast Districts, Map 136 A).

The area is in British Columbia. The glaciers of the Hazelton-Aldermere district are just south of the Grand Trunk Pacific Ry., which crosses the Canadian Coast Range by the canyon of the Skeena River. Just north of the Skeena, at the head of the Portland Canal fiord, are the glaciers of the Portland Canal mining area. This is in latitude 55° to 56° N., the coastal area being slightly north of the inland area. How much more snowfall is shed upon the windward or western slope of the Coast Range by the prevailing westerly winds is shown by the altitude of the glacier termini. In the Portland Canal region the Bromley Glacier extends down to less than 1,000 feet above sea level, while in the Hazelton-Aldermere region the largest ice tongues terminate 4,500 to 5,000 feet above sea level. Moreover, there are more and larger ice masses on the windward than on the leeward slope of the Coast Range.
Lawrence Martin.

The Nineteenth International Congress of Americanists. The Washington meeting of the Congress scheduled for October 5, 1914, was indefinitely postponed in consequence of the European war. Chairman W. J. Holmes recently announced that it is now deemed possible to hold a well-attended session of the Congress during the coming winter. The session will be held in Washington, December 27-31, when a number of other important scientific bodies will meet at the capital. The meeting will be held jointly or in cooperation with the Anthropological Section of the Pan-American Scientific Congress, the American Anthropological Association, the American Historical Association, the American Folklore Society and the Archeological Institute of America. The programme previously published will for the most part be carried out excepting the field excursions.

CENTRAL AMERICA AND WEST INDIES

Conditions at the Panama Canal. On July 16 the battleships *Missouri, Ohio* and *Wisconsin,* of the U. S. Navy, passed through the Panama Canal and continued their cruise to San Francisco. Several minor warships of various powers had previously used the Canal, but this passage demonstrated its practical use in connection with the manœuvers of the American navy.

The slides in Gaillard Cut are still giving considerable anxiety and it will be six months before comparatively stable conditions will be obtained, with minor disturbances for several years to come. While I was on the Isthmus this summer, the largest ships were held up but one day, and that, strange to relate, due to a slide on the very day that Gen. Goethals announced in New York that the fleet could pass through. The records show, in the year that the Canal has been open to traffic, that the total delays due to all causes have amounted to less than three weeks with conditions steadily improving.

The only point at which trouble is experienced is in a 1,200-foot stretch immediately north of Gold Hill, the Continental Divide; and even were everything in sight to come down at once, the 300-foot bottom width of the canal and the extremely flat side slopes give such a margin of safety that it does not appear possible for any more than slight temporary troubles to take place. A marvelously organized dredging fleet is constantly at work with sufficient capacity to remove 750,000 cubic yards a month. JAMES GORDON STEESE.

San Blas Indians Losing Their Isolation. The north coast of the Republic of Panama from a point a few miles west of the Gulf of San Blas to Cape Tiburon on the Colombian frontier is occupied by the San Blas Indians. These Indians have preserved their independence and have successfully held their territory from foreign exploitation to the present time. Even the Isthmian Canal Commission had to make an agreement with them concerning sand deposits at Nombre de Dios. Their blood and racial characteristics have also been kept pure, and it is a fact that traders along the coast are forced to return to their ships at sundown and, even in the last year or two, a few venturesome prospectors have been escorted out of the country by the Indians.

The President of Panama made a special trip of conciliation to the San Blas coast this spring, but most of the Indian chiefs refused to receive him, and the trip was a failure. However, he did meet some of them and established a custom house on one of the islands in the Gulf, where all trading boats must clear. This will deprive the recalcitrants of many of their luxuries, and it is hoped they will come around eventually. But at present they are flying the Colombian flag, not in deference to Colombia, but in defiance of Panama.

JAMES GORDON STEESE.

Hydrographic Survey of the Cuban Coast. During the Spanish-American War, the navigators of the United States fleet, on leaving our well-surveyed Atlantic Coast, came at once into West Indian waters where navigation was hazardous, because the coasts and anchorages had not been surveyed with sufficient accuracy to make it possible to provide good navigation charts. In some areas the coastal waters had scarcely been explored.

Our Hydrographic Office informs the *Bulletin* that among the survey operations conducted by our naval vessels since that time, none are more important than the coast survey of Cuba. This work was started soon after the founding of the Republic, with surveys of the harbors of Havana, Santiago, Guantanamo, Bahia Honda, Cabañas, Sagua la Grande, Nuevitas, Puerto Padre, Gibara, Banes, Nipe, Levisa, Cabonico, Tanamo, Baitiqueri, Hatibonico, Yateras River, Escondido, Daiquiri, Siboney, Nima-Nima, Chirivico, Ensenada de Mora (Pelon

Harbor), Niquero, Manzanillo, Santa Cruz del Sur and Cienfuegos. It was continued by the establishment of their geographical positions determined by a supplementary expedition equipped by the Navy Department to fix meridian distances by exchange of telegraphic signals. The work was later planned to include the whole coast of Cuba, and at present embraces the entire southern seaboard from Cape Maysi, at the eastern end of the island, stretching westward from Cape Cruz and Manzanillo, where emergent areas rising from moderate depths form the channels through which several of the important ports of Cuba are approached.

It is expected that during the coming winter these survey operations will be extended westward from Casilda across the mouth of the harbor of Cienfuegos and beyond toward the region of the Isle of Pines. The Cuban gunboats *Habana* and *Diez de Octubre,* which rendered valuable service last winter in supplementing the work of our own survey expedition, will continue this needful work, which is so important for the commercial and military interests of Cuba.

SOUTH AMERICA

Professor Bingham's Latest Expedition. Professor Hiram Bingham, of Yale University, (Director of the Peruvian Expedition of 1914-15, under the auspices of Yale University and the National Geographic Society), returned early in September from this, his fifth expedition to South America. His latest work in Peru was conducted in the same general region as his two preceding explorations—the Apurimac and Urubamba Valleys, and the adjacent divides. Mr. Orator F. Cook, Chief of the Office of Crop Acclimatization, Department of Agriculture, and his assistant, Mr. Gilbert, returned with him. They were very successful in their search for new plants and ancient food plants, and brought home several thousand specimens.

The naturalist, Mr. Edmund Heller, who expects to return late in October, has collected about 1,000 specimens of mammals and birds, which will go to the United States National Museum. Chief Assistant Hardy, who also returned with Professor Bingham, is accompanied by a Quichua Indian, of whom he is learning to speak the native language, the modern form of the Inca tongue. Three other members, Surgeon Ford, and Engineers Hasbrouck and Maynard, are to remain in Peru until late this year. The Archæological Engineer of the Expedition, Mr. Ellwood C. Erdis, is now on his way to this country. The *Bulletin* expects to publish a summary account of the most important archæological and geographical results of Professor Bingham's 1914-15 Expedition.

AFRICA

Area of German East Africa. Recent measurements by H. Böhler on the standard map of the colony by Sprigade and Moisel on the scale of 1:300,000 have resulted in the determination of the area of German East Africa as 997,145 sq. km., with a limit of error of ±200 sq. km. This is the equivalent of 409,691 sq. miles, or, in round numbers, 410,000 sq. miles—about the combined area of Texas, Oklahoma and Kansas. In this figure are included the German portions of the Central African lakes, as follows: Tanganyika, 16,070 sq. km.; Nyasa, 5,640 sq. km.; Victoria, 34,360 sq. km.; Kivu, 930 sq. km.—a total of 57,000 sq. km. (*Mitt. aus den Deutschen Schutzgeb.*, Vol. 27, 1914, No. 1, p. 80).

ASIA

Sir Aurel Stein in Central Asia. The *Geographical Journal* (August, p. 154) gives further information of the work of this explorer. He accomplished [later than November, 1914], with complete success, a long desert journey from Turfan, though the ground and the climatic conditions were trying, potable water was scarce and icy winds were experienced daily. With the aid of his two survey assistants, traveling by different routes, large areas in the "Dry Mountains" hitherto little known were mapped. The exploration of the ancient bed of Lop Nor was completed. The earliest Chinese route in Central Asia has now been traced throughout and all its ruined watch-stations and cemeteries searched for antiquities. Since the winter of 1913-14 the Indian triangulation net has been carried from the main Kuen-lun across the Lop Desert as far north as the Tien Shan, thanks to the persistency of Sir Aurel's old companion, Lal Singh. Sir Aurel himself examined the old sites about Kucha, interesting in connection with the diminished water supply within historic times. A careful study of modern conditions of irrigation is much needed and there is a large field open for an irrigation engineer in all the oasis. Sir Aurel obtained permission from the Russian authorities to travel during the summer of 1915 in the mountainous tracts north of the Oxus. He hoped thus to see an historically interesting region, one part of Bactria, and to reach Seistan in the autumn. Here he would have the opportunity for a specially interesting study of the remains and physical conditions of a miniature edition of the Lop Basin. The traveler's safe arrival at Kashgar has since been reported.

AUSTRALASIA AND OCEANIA

Central Australia and Its Possibilities. Mr. W. H. Tiekkens, in a paper read at the Australian meeting of the British Association last year, said that Central Australia (between 24°20′ S. and 30°35′ S. and 123° and 133° E.) embraces an area of about 378,000 square miles, considerably greater than the area of New South Wales. This immense area is a sandy depression, in places perhaps not much above sea-level, where the sand-hills or sand-dunes in some instances may be 100 feet high. It has been called the "Dead Heart of Australia."

So much has been done in reclaiming these so-called desert tracts in other countries that, in Mr. Tiekken's opinion, it would be well to turn attention to this enormous area in Australia. The sand-hills occur in confused groupings, also in nearly parallel ridges, but these do not prevail west of 127° E. long. To the west, with few exceptions, the country is more level, the soil is hard loam, with nodules of iron-stained gravel, robust vegetation, spinifex, desert oak, and other plants. The purpose should be to ascertain where irrigation may be carried on, which will in time develop and make profitable what has hitherto been regarded as desert waste.

Possibilities are suggested, he says, from the fact that native wells are sometimes the remains of mound springs. These springs are the natural outlet of artesian waters, and from that it would seem that the artesian basin may here be nearer the surface than has hitherto been observed in Australia.

The Trans-Australian Railroad. A recent report of the Chief Commonwealth Railroad Engineer gives some details of the progress of construction of the east to west transcontinental railroad of Australia. It says that the Western Australian Division survey is complete and the route has been permanently located to 280 miles. The South Australian survey is complete. It is predicted that the rails will be laid throughout before the end of next year, although the rate of progress will be reduced by the very heavy earthworks soon to be taken in hand in the South Australian section. During the three months preceding the date of the report, 240 miles had been laid. The line is to be ballasted throughout, and arrangements have been made to select quarry sites and erect the necessary plant for rock-crushing. In view of the scanty water supply on the route, reservoirs had to be provided at various points and several are in course of construction. (*Geogr. Journ.*, Vol. 46, 1915, No. 2, p. 157.)

EUROPE

Pseudo-glacial Features in Dalmatia. Professor J. W. Gregory of the University of Glasgow has contributed an article under the above title to the *Geographical Journal* for August (Vol. 46, 1915, pp. 105-117) which forms a fitting supplement to his recent volume on the "Nature and Origin of Fiords."

In that volume he rejected the origin of fiords by glacial erosion, and ascribed them chiefly to fractures and normal erosion. In the present article, he sets up a straw man and then bowls him over: that is, he describes ''hanging valleys, truncated spurs, oversteepened slopes, overdeepened valleys, spurless walls, trough valleys, and rounded subdued relief'' in Dalmatia, all of which have elsewhere been taken as giving indirect evidence of glacial action; he then shows that Dalmatia has not been glaciated, except in its higher mountains; and thereupon concludes that the above Dalmatian features ''are not due to glacial erosion.'' There can be no question that his conclusion is correct; but it would seem hardly necessary to give so elaborate a disproof of anything so absurd as the counter supposition; for who believes that those Dalmatian features are of glacial origin? The real inwardness of the article seems to be left unexpressed—namely, as the above-named features are not of glacial origin in Dalmatia, they are not of glacial origin anywhere else.

There is a curious lack of critical discrimination in Gregory's article. He instances ''valleys with spurless, parallel walls,'' but says nothing as to how far their forms are dependent on strong and weak structures; one example in which both sides are spurless, ''would pass as an excellent example of an ice-worn trough-valley'' in the Appalachians of Virginia, but as they are manifestly subsequent valleys of normal erosion, excavated on weak strata between enclosing harder strata, no one has ever, to my knowledge, confused them with glaciated troughs. The walls of the lower valley of the Kerka are said to be ''as smooth and spurless as those of a Scottish glacier-worn glen''; but the Kerka valley is a young gorge eroded by a large river in a limestone peneplain; it is spurless because it is young. As to ''rounded subdued relief,'' forms of that kind prevail wherever normal erosion has worked long enough without interruption: hills of drumlin-like form occur in certain parts of Pennsylvania, but they have been normally worn down on belts of shale.

On the other hand, there is a certain ''fool-killer'' value in Gregory's discussion; it may help to discredit the work of careless observers, who mistake every rounded granite boss, every truncated spur, every hanging valley, every ria, for the work of glacial erosion; but it is a question whether such observers are numerous enough, or their work important enough, to make it worth while to follow them up and destroy them. Inasmuch as it is well known that rounded bosses and truncated spurs, hanging valleys, and steep-sided rias may be produced by normal erosion as well as by glacial erosion, it would be profitable to consider the means of discriminating between such imitative forms; but this Gregory has not done, either in the present article or in his earlier work. It is because of his failure to make such discrimination that he does not include glaciers as strong crosive agencies. W. M. Davis.

A Map of Europe on the Scale of 1:1,000,000. The Royal Geographical Society of London publishes, in the July and August numbers of the *Geographical Journal*, a paper by its Secretary, Mr. A. R. Hinks: ''The Map on the Scale 1:1,000,000 Compiled at the Royal Geographical Society under the Direction of the General Staff, 1914-1915'' (Vol. 46, 1915, No. 1, pp. 24-50, No. 2, pp. 140-145, with maps). The paper describes the compilation and publication of a new map of Europe on the scale of 1:1,000,000. The war created a demand for a general, yet sufficiently detailed map suited to a study of the broader problems of military strategy and politics. None of the existing series of war office maps, of which instructive index diagrams are given in Mr. Hinks's paper, covered the whole area; their use, therefore, would have necessitated the very adjustment to differing scales and methods of treatment which would have prevented all attempts at broad generalization. The same is true of the maps in a standard general atlas, such as Andree's *Handatlas,* for the European maps of which a suggestive diagram is also given, showing the extent and scale of each plate. Of the International Map of the World, whose scope would have made it very suitable, only a few isolated sheets had been published prior to the outbreak of the war.

It was therefore decided to prepare a map which would be the best equivalent that could be made at short notice of what the International Map would have been if it had been available. All of the essential requirements of the International Map have been retained, both as to subdivision of sheets and selection of elements represented, although some modifications had to be made. The work was begun in September, 1914; the high pressure under which it has been done is attested by the fact that no less than twelve sheets have been published to date (N-32, Hamburg; N-33, Berlin; N-34, Warsaw; M-32, Frankfurt; M-33, Vienna; M-34, Cracow; M-35, Jitomir; L-32, Milan; L-33, Triest; L-34, Budapest; K-33, Rome; K-34, Sofia). The sheets were compiled by the Royal Geographical Society and are published by the Geographical Section of the General Staff, of whose agents they may be purchased at one shilling each. Other sheets, including six to cover Asia Minor, are to follow.

An examination of the twelve published sheets, sent to the Society by the Royal Geographical Society, gives an insight into the astounding amount of work accomplished by those concerned in their preparation. Sheets that ordinarily would have taken at least a year to publish have been issued at the average rate of one a month. The necessity for speed has demanded and received a critical restriction to essentials; for this reason the maps are all of an eminently workable nature. The general effect of the map is to bring out prominently roads and railroads on a subdued, yet perfectly legible, background of relief and drainage. Roads are shown in full red lines; three classes are distinguished. First-class roads thus stand out much better than if drawn according to the International Map regulations, which required two thin parallel lines. The symbol for railroads has also been changed, a solid black line being used for two-track lines, instead of the cross-tie symbol advocated by the London conference of 1909. Two other classes of railroads are distinguished: single-track and narrow-gauge.

Relief is represented in brown contours: the contours selected differ from those prescribed either at the London or the Paris (1913) Conference. The former prescribed a contour interval of 100 meters or, in the case of very rugged country, 200, 500 or 1,000 meters. The latter made obligatory the contours of 200, 500, 1,000, 1,500, 2,000, 2,500, 3,000, 4,000 meters, etc. The present map shows the 100 and 200 meter contours and, above, every contour at an interval of 200 meters, in the laudable belief that a change in the contour interval on higher ground creates misconceptions as to the topography. This is doubtless more particularly the case where the contours are unsupported by hypsometric tints, as with the present map. The absence of hypsometric tints is, indeed, the main factor which differentiates in appearance the present map from the published sheets of the International Map. The present issue is termed a provisional edition; in a second edition it is intended to use a simplified color scheme of two green tints below 200 meters and three orange-brown tints above. In the representation of drainage a valuable innovation has also been made, in that the larger river channels are shown in solid blue; this brings such rivers as the Danube into their proper prominence, instead of suppressing them, as did the International Map. Various other innovations may be mentioned: Boundaries are not shown by black crosses, but by violet dots, giving greater flexibility and transparency; the names of larger areas are not shown on the main map, but in a small index diagram on the margin of each sheet, thus doing away with the unsynoptical nature of widely spaced lettering. The orthography of names has received special attention and has been solved in this way: All names in languages using the Latin alphabet have been retained in their original form, the difficulties in pronunciation in such languages as Polish, Czech, Hungarian, Rumanian, etc., being overcome by appending on each related sheet a brief pronouncing key. Names in languages not using the Latin alphabet have been transliterated.

These are only some of the features that received thorough consideration before embarking on the preparation of the map. The decisions arrived at reflect throughout a wise flexibility which has made for practicableness while insuring at the same time a high standard of scientific excellence. That all this has been attained in the space of less than a year shows that, in England, geography has risen to its country's call in her hour of need.

GENERAL

A History of Paleogeographic Maps. In a recent paper (Zur Geschichte der paläogeographischen Rekonstruktionen, *Geogr. Zeitschr.*, Vol. 20, 1914, pp. 197-208) T. Arldt gives a chronological review of all past attempts to represent the distribution of land and water in former geological ages. The nature of the subject is responsible for the fact that these reconstructions are best made in graphic form, and Dr. Arldt's paper therefore necessarily mainly refers to maps. The science of paleogeography dates from the middle of the nineteenth century. Some of the earliest reconstructions were the maps accompanying the first edition of Dana's *Manual of Geology* in 1863. Prior to 1885 most reconstructions dealt with a relatively limited area. M. Neumayr was the first to attempt to reconstruct the distribution of land and sea for the whole earth; an added merit of his method was that he restricted himself to a definite subdivision of a geological epoch (Jurassic), while previous representations had dealt with whole epochs or systems, and that he recognized the existence of climatic zones in the geological past. In its revised form, as published in his *Erdgeschichte* in 1886-87, it became widely known. With the publication, in 1900, of the fourth edition of his *Traité de Géologie,* de Lapparent began the series of world maps which have made his manual the standard compendium of paleogeography. In the last, fifth edition, of the book (1906) there are no less than 23 world maps (in stereographic as compared with Mercator's projection in the fourth edition), 34 maps of Europe, 25 of France, and 10 others reproduced from other writers. The most important paleogeographic maps relating to North America are those published in Chamberlin and Salisbury's *Geology* (Part II: Earth History, Vols. II and III) and in Schuchert's fundamental paper entitled ''The Paleogeography of North America'' in the *Bull. Geol. Soc. Amer.*, Vol. 20, 1910, pp. 427-606.

PERSONAL

Prof. Giovanni de Agostini, the founder and director of the Geographical Institute at Novara, Italy, has been elected an Honorary Member of the Royal Geographical Society of Rome.

Prof. Eduard Brückner has been elected President and Prof. Eugen Oberhummer Vice-President of the Vienna Geographical Society.

Dr. Nevin M. Fenneman, Professor of Geology at the University of Cincinnati, will have a year's leave of absence in 1916-1917.

OBITUARY

Andrew J. Herbertson. Through Professor Herbertson's death, to which brief allusion was made in the September *Bulletin,* geography in England and, indeed, in all English-speaking countries, loses one of its ablest exponents. His has been no small share in the advance of geography in England during the last thirty years. Appointed Reader in Geography at the University of Oxford in 1905 as the successor of Mackinder, and Professor in 1910, he has probably exerted a greater influence on the teaching of geography in England than any other man. His editorship of the *Geographical Teacher* afforded him an additional medium of expression and influence. His interest in the methods of geography was markedly developed—a fortunate circumstance in one called upon to coordinate and systematize a subject and impart its essentials to others. Probably his most notable contribution in this field was his work on the natural regions of the earth. Using the elements of relief, climate and vegetation as criteria, he devised a scheme of subdivision of the earth into a number of units whose physical characteristics were essentially homogeneous.

The study of climate, because of its influence on life, had always appealed to him as of fundamental importance; several of his most important contributions, such as ''The Distribution of Rainfall over the Land'' (1901) and Bartholomew's ''Atlas of Meteorology'' (joint author, 1899) belong to this field. Among his best-known text books are the ''Preliminary, Junior, and Senior Geographies'' belonging to the series of Oxford Geographies, to which, under his editorship, others have contributed important volumes. He also published the Oxford series of wall maps, in which the British Isles, the continents and the world were each represented by a set of maps showing the relief, rainfall and vegetation. His recent ''Handbook of Geography'' (1911-12) aims to supply the long-felt want of a work intermediate between the ordinary elementary school geography and such a standard work of reference as Dr. Mill's ''International Geography.'' A similar recent undertaking for a restricted portion of the globe is the ''Oxford Survey of the British Empire,'' of which he was editor. In his ''Man and His Work'' (1899), finally, Herbertson gave us an admirable popular presentation of the principles of anthropogeography.